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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,519	10/06/2003	Manabu Hashikura	39.028-AG	2518

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JUDGE PATENT FIRM
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NISHINOMIYA-SHI, HYOGO, 662-0035
JAPAN

EXAMINER

JAGAN, MIRELLYS

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/605,519	Applicant(s) HASHIKURA ET AL.	
	Examiner Mirellys Jagan	Art Unit 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13 is/are pending in the application.
- 4a) Of the above claim(s) 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 9, 11 and 13 is/are rejected.
- 7) ☒ Claim(s) 8 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6, 7, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 2002164291 to Shiyoku in view of U.S. Patent 4,259,123 to Tymkewicz.

Shiyoku discloses a thermocouple temperature gauge in a semiconductor manufacturing equipment having a ceramic susceptor. The thermocouple has an exposed contact at its tip end. The temperature gauge is placed within the ceramic susceptor and bonded therein for measuring the temperature of a wafer as it is being processed by the manufacturing equipment.

Shiyoku does not disclose the temperature gauge having its contact tip end contacting the temperature measuring site in the susceptor; and detachable retaining means for mechanically pressing upon the contact to retain it against the site; wherein the retaining means is a retaining member that screws into the subject for clamping the contact in-between the retaining member and the subject; the retaining member is a cylindrical form having male threads in its lateral surface for screwing together with the female threads of the subject so that one end face of the member presses the contact onto the subject, the retaining member has a through-hole penetrating from one end face to another end face thereof so that lead lines from the thermocouple can be

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passed through the through-hole, or the retaining member in an end face thereof is furnished with a recess into which a communicating through hole opens so that the contact and lead lines accompanying the contact can be housed in the recess; and a tubular member either joined to or furnished integrally with an end face of the member opposite where the contact is clamped for accommodating lead lines from the thermocouple.

Tymkewicz discloses a temperature gauge comprising a thermocouple having an exposed contact at its tip end and contacting a temperature measuring site in a subject (9); and detachable retaining means for mechanically pressing upon the contact to retain it against the site; wherein the retaining means is a retaining member that screws into the subject for clamping the contact in-between the retaining member and the subject. The retaining member is a cylindrical form having male threads in its lateral surface for screwing together with the female threads of the subject so that one end face of the member presses the contact onto the subject, the retaining member has a through-hole penetrating from one end face to another end face thereof so that lead lines from the thermocouple can be passed through the through-hole, or the retaining member in an end face thereof is furnished with a recess into which a communicating through hole opens so that the contact and lead lines accompanying the contact can be housed in the recess. A tubular member (1) either joined to or furnished integrally with an end face of the member opposite where the contact is clamped for accommodating lead lines (2/3) from the thermocouple.

Tymkewicz discloses that the thermocouple temperature gauge is beneficial over other contact thermocouples since the mounting of the temperature gauge allows the sensing contact to be biased against the surface being measured to provide improved response to temperature changes.

Referring to claims 1 and 13, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the ceramic susceptor disclosed by Shiyoku by mounting the temperature gauge in the susceptor in a biased manner as taught by Tymkewicz in order to bias the temperature gauge against the ceramic susceptor to obtain improved temperature measurements.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiyoku and Tymkewicz, as applied to claims 1-3, 6, 7, 9, and 13 above, and further in view of U.S. Patent 3,751,305 to Huebscher.

Shiyoku and Tymkewicz disclose a temperature gauge having all of the limitations of claim 4, as stated above in paragraph 2, except for the other face of the retaining member having a groove for being turned by a turning tool when the retaining member is screwed in to the subject.

Huebscher discloses a retaining member comprising a screw (F) for threading into a subject (E) whose temperature is to be measured by a temperature sensor. The screw has a groove for being turned by a turning tool, e.g., screwdriver, when the retaining member is screwed in to the subject (see figure 8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the temperature gauge of Shiyoku and Tymkewicz by adding a groove for a turning tool, as taught by Huebscher, in order to facilitate threading the temperature gauge to the subject being measured.

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4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiyoku and Tymkewicz, as applied to claims 1-3, 6, 7, 9, and 13 above, and further in view of U.S. Patent 4,904,091 to Ward.

Shiyoku and Tymkewicz disclose a temperature gauge having all of the limitations of claim 11, as stated above in paragraph 2, except for the thermal expansion coefficient of the member being about equal to the thermal expansion coefficient of the subject.

Ward discloses a temperature gauge comprising a thermocouple having retaining means for screwing together into a subject being measured. The thermal expansion coefficient of the retaining means is about equal to the thermal expansion coefficient of the subject (see figures 1 and 2; and abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the susceptor of Shiyoku and Tymkewicz by making the member of a material that has a thermal expansion coefficient that is about equal to the thermal expansion coefficient of the subject, as taught by Ward, since similar coefficients will thermally expand and contract in a like manner and prevent loosening of the threading connection.

Allowable Subject Matter

5. Claims 8 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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6. The Examiner's statement of reasons for the indication of allowable subject matter is presented in the Office action dated 6/14/05.

Response to Arguments

7. Applicant's arguments, filed 10/14/05, with respect to the rejection(s) of claim(s) 1-3, 6-11, and 13 and been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Shiyoku, Tymkewicz, Huebscher, and Ward.

Conclusion

8. Applicant's amendment (10/14/05) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

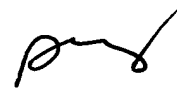
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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is 571-272-2247. The examiner can normally be reached on Monday-Friday from 11AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ
October 28, 2005



Diego Gutierrez
Supervisory Patent Examiner
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